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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,634	05/02/2001	Thomas A. Seeman	TIG-200-A	6613

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EXAMINER

VINCENT, SEAN E

ART UNIT PAPER NUMBER

1731

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/847,634

Applicant(s)

SEEMAN ET AL.

ed

Examiner

Sean E Vincent

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 13-19, 21 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 13-19, 21 and 24-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

DETAILED ACTION

*Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seeman (US 4498918).

4. Seeman taught methyl acetylene / propadiene mixed with methyl acetylene and describes methyl acetylene / propadiene as commercially available in a mixture containing methyl acetylene / propadiene, butane, propylene and propane. It contained 41.73 weight percent of methyl acetylene and propadiene, 6.37 weight percent of butanes, 44.24 weight percent of propylene and 7.66 weight percent of propane. Seeman also describes mixing 90 volume percent methyl acetylene / propadiene with 10 volume percent of a gas containing an acetylenic triple bond which can be allyene (which is also known as methyl acetylene...see col. 3, lines 3-8 and col. 3, line 44 to col. 4, line 30). While Seeman does not teach "90% by volume of a mixture of methylacetylene, propadiene and propylene and 10% by volume of propane", the proportions are

Art Unit: 1731

so close that one would have expected them to have the same properties, see *Titanium Corp. v. Banner* 227 U.S.P.Q. 773, (Fed. Cir. 1985).

5. The claims are given their broadest reasonable interpretation in light of the “comprising” terminology. Applicant's claims do not exclude other gases such as butanes or hydrocarbons containing an acetylenic triple bond in the gaseous mixtures claimed. Applicant further does not specify the proportions of methylacetylene, propadiene and propylene in the first gas mixture and ~~interpreted broadly this permits an infinite number of variations in the weight percentage~~

compositions from the prior art on which the present claims read. Even if the compositions stated in Seeman were not to fit squarely within applicant's claimed ranges, the weight percent composition possibilities claimed by applicant would overlap the weight percent composition of Seeman. It would have been obvious to a person skilled in the art at the time the invention was made to select the overlapping portions of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.

6. Claims 1-4 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Virey (US Re. 34785).

7. Virey teaches methods of superstoichiometric combustion of hydrocarbons in flames preferably higher than 2500°K for the main purpose of glass mold lubrication (see col. 3, line 34 to col. 4, line 63). Mixtures of propyne and propadiene and further additions of propane are disclosed. It is the position of the examiner that the broad recitation of “90% by volume of a mixture of methylacetylene, propadiene and propylene and 10% by volume of propane” reads on

Art Unit: 1731

the disclosed hydrocarbon mixtures of Virey. *Note the above discussion with regard to the breadth of the claimed gas mixture (paragraph 5).*

8. Virey also anticipated other heat sources including plasma in col. 4, lines 22-26. Virey does not teach mold heating, per se. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to expect mold heating to occur in the process of Virey because the requirement for an oxygen-rich combustion in the flame and a minimum desired ~~temperature suggested that mold heating would have been inherent in the mold lubrication~~ process.

9. Virey does not teach mold heating prior to or during a production run. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to heat molds prior to or during a production run since mold lubrication was done during a production run and Virey taught preferred flame characteristics.

10. Claims 13-19 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Virey in view of Eagle et al (US 5888266).

11. Virey does not teach changing the gas mixture while maintaining the flame to either inhibit or promote carbon skeleton formation. Eagle et al taught similar processes wherein carbon deposits were taught to be removed by adding methane to a "C-53" gas mixture. With regard to C-53, Eagle et al states "Its composition has varied over the years, but it is presently a blend of methyl acetylene and propadiene (about 45 mole percent), propylene (about 45 mole percent), and butane and propane, (about 10 mole percent)." Eagle et al provides a suggestion to mix methane (natural gas) with C-53 gas to reduce or remove carbon deposits from glass contacting plungers during a heating process using a combustible hydrocarbon gas mixture. The

Art Unit: 1731

logical conclusion which follows from this is that the degree of carbon deposition varies inversely with the methane proportion in the gas mixture. (see example and col. 4, lines 44-55). *Note the above discussion with regard to the breadth of the claimed gas mixture (paragraph 5).* It would have been obvious to a person of ordinary skill in the art at the time the invention was made to change the mixture of Virey with natural gas because Eagle et al taught that a carbon deposit could be removed from a plunger by increasing the methane proportion in a C-53 gas mixture.

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12. Virey et al does not disclose venturi mixers. Eagle et al taught similar processes using a venturi mixer (not shown) and a two way Humphrey valve (not shown). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the venturi mixer of Eagle et al in the process of Virey et al because Eagle et al showed that it was a well known gas mixing means in the art of heating molds with combustible hydrocarbon gases.

### ***Response to Arguments***

13. Applicant's arguments filed October 14, 2003 have been fully considered but they are not persuasive.

14. In response to the argument that:

Because applicant is claiming "90 percent by volume of a mixture of methylacetylene, propadiene and propylene; and 10% by volume of propane", and this totals 100% by volume, this inherently excludes other gases such as butanes or hydrocarbons containing an acetylenic bond.

the examiner disagrees. The first mixture could contain other gaseous components in trace amounts or in large amounts. The first mixture might contain only trace amounts of all but one of the named gases. Further, applicant would have to claim that ideal gas conditions were

Art Unit: 1731

present to make an assertion that volume percent proportions could in any way exclude other gases and there is no support in the original disclosure for such a claim limitation. Claim 30 remains open to further gas additions.

15. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

16. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine Eagle et al with Virey was stated in the original rejection: "It would have been obvious to a person of ordinary skill in the art at the time the invention was made to change the mixture of Virey with natural gas because Eagle et al taught that a carbon deposit could be removed from a plunger by increasing the methane proportion in a C-53 gas mixture"

***Conclusion***

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

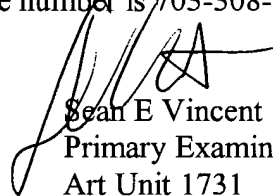
18. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after ~~the end of the THREE-MONTH shortened statutory period, then the shortened statutory period~~

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E Vincent whose telephone number is 571-272-1194. The examiner can normally be reached on M - F (8:30 - 6:00).

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

21. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

  
Sean E Vincent  
Primary Examiner  
Art Unit 1731

S Vincent